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ABSTRACT

Discussed are personnel issues in special education from the perspective of an observational evaluation of an experimental course of study, "Social Learning Curriculum," used with students in 17 intermediate (ages 9 to 14 years) classes for the educable mentally retarded. Included is the 60-item rating scale which was used to evaluate teachers and students for the curriculum objectives of critical thinking and independent action. Results are examined in terms of the curriculum model based on emergence of a problem, differentiation of elements, and integration of problem elements with new knowledge. Findings are seen to indicate a wide variation in the implementation of the curriculum and suggest the need for providing teachers with training in the process of implementation as well as the content of a new curriculum. (DB)

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Curriculum Research and Evaluation: Implications for Personnel Training[1]

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The topic of "Personnel Issues in Special Education" is approached in this paper from the perspective of curriculum research, development, and evaluation.

For the past two years the Curriculum Research and Development Center in Mental Retardation at Yeshiva University has been conducting observational studies of classes using the Social Learning Curriculum. The major focus of this investigation has been the validation of an instrument which monitors the implementation of the SLC. The implications of the study extend beyond the curriculum itself.

This paper reviews the study conducted by the Curriculum Center and discusses the implications for personnel training in Special Education.

Problem

Traditionally, evaluation of an educational program or curriculum has been determined on the basis of student gain scores derived from pre- and post-assessment of student achievement or attitudes. This type of evaluation is often characterized as summative since it is completed toward the end of a program's development.

An observational approach to the examination of the Social Learning Curriculum appeared warranted since comparative data on student outcomes would be meaningless without information on how, and under what circumstances, the SLC was implemented. Variation in the implementation of the SLC would certainly influence the results the program produces. Therefore, data regarding student outcomes could only be interpreted within the context of information about differences in the program's implementation. Simply stated, the process of implementation will effect the results of a curriculum. Information regarding that process must be considered in an examination of those

results. This viewpoint has been discussed elsewhere by Rosenshine (1970), Rosenshine and Furst (1973), and Glennon (1973).

The Social Learning Curriculum is unique in the sense that it specifies a process of implementation and a particular teaching method. Both are as vital to the Curriculum as its content. The Social Learning Environment Rating Scale was developed to monitor the process and method specified by the curriculum writers. It is intended to provide a context for interpretation of measures designed to examine the effect of the SLC on EMH students. Additionally, it was felt that classroom observation information would be useful to curriculum developers for revision purposes and would provide a framework for teacher-supervisor interaction to optimize the use of the SLC.

Method

Instrumentation. The development of a curriculum specific classroom observation instrument requires the translation of the theoretical model and specified process of implementation into observable student and teacher behaviors. In the case of the Social Learning Environment Rating Scale this item development took approximately eighteen months.

In the early development stages of the SLERS it became apparent that an instrument designed for observing the SLC in action should encompass three related areas: (a) the major curriculum objectives of Critical Thinking and Independent Action, (b) the structure of the SLC and its related teaching method, and (c) the classroom environment in which the curriculum would be used. Additionally, individual teachers' management and understanding of the curriculum had to be considered (e.g., pacing, use of additional materials, comprehension of specific objectives, and so on).

Critical thinking is the ability to use a problem-solving strategy in a consistent, appropriate, effective, and efficient manner. Independent action is the application of that strategy without undue reliance on other persons. These are the major objectives of the SLC since both are viewed as necessary for the social adjustment and adaptation of the individual.

Implementation of the Social Learning Curriculum is based upon a Gestalt theory of learning applied to problem solving within a curricular context. It consists of three elements: Mass, Differentiation, and Integration. The Mass is the emergence of a problem whose solution requires students to think critically. Differentiation is the separation and analysis of the elements of the problem. Integration is the reorganization of the elements of the problem situation and the incorporation of the knowledge gained during the differentiation stage to abstract a rule or concept which may then be applied, independently of the teacher, in similar future situations.

Consistent with this MDI process the SLC prescribes an inductive teaching method (Goldstein, 1974). This method consists of the use of a five-step hierarchical sequence of questions which constitute the inductive problem-solving strategy (Greenberg and Smith, 1974). Briefly, the five steps of the hierarchy are as follows:

1. Labeling, in which the teacher has the students name objects or elements in the problem situation.
2. Detailing, in which the teacher has the students describe the elements previously labeled.
3. Inferring, in which the teacher has the students make associations between ideas and events relevant to the problem and its solution.
4. Predicting/Verifying, in which the teacher has pupils articulate alternative solutions, predict the consequences of each solution, and try out the accepted solution.

5. Generalizing, in which the teacher has pupils abstract concepts and skills learned in one problem-solving situation and apply them to a new but similar situation.

The inductive strategy was chosen since the primary target population of the SLC, EMH students, do not often possess the rules to guide their social behavior. Inductive problem solving allows them to formulate rules within the classroom environment and provides them with a strategy for dealing with problem situations outside the classroom.

Both the process of implementation, teaching method, and student attainment of critical thinking and independent action occur within the environment of the classroom. That environment is actually a confluence of physical, social, and psychological elements. Thus, the classroom must reflect a social learning environment which facilitates the teacher's use of the curriculum and the student's ability to think critically and act independently.

The pilot version of the SLERS was designed to tap these three dimensions. Additionally, items which related to the teacher's management and adaptation of the curriculum to his/her particular teaching situation were included. There were a total of sixty items. Each item is rated on a scale of 1 to 5 with 5 being the highest possible rating. Items are rated on the basis of the frequency and quality of the observed behavior. Table I presents the pilot version of the SLERS.

Insert Table I about here

Observer Training. Three observers were trained in the use of the SLERS. The observers were graduate students in special education or educational psychology and all had some teaching experience. Training occurred over a four-month period and occurred in classes which were using the Social Learning

TABLE 1

PILOT VERSION

SOCIAL LEARNING ENVIRONMENT RATING SCALE
TEACHER SUBSCALE

Critical Thinking (C.I.)

A. Teacher is aware of individual differences.

1. Acts upon differences in pupil learning style.

B. Focuses on the objective of the experience.

2. Understands objective (determined by what teacher does.) a) Structures critical points in experience, rather than peripheral issues. b) Uses questions and activities that arrive at the objective-determined by outline of what the teacher does.

3. Teacher implements experience by focusing primarily on task rather than self.

C. Uses the inductive problem-solving strategy.

4. Presents problems or has problems emerge related to the objective.

5. Has pupils label appropriately.

6. Assists pupils in separating relevant from irrelevant information with respect to the problem to be solved.

7. Restructures or gives relevant cues so that pupils can rethink problem (pupil mediation.)

8. Provides opportunity for pupils to expand upon ideas.

9. Provides opportunity for pupils to make associations between ideas.

10. Allows time for reflection.

11. Provides opportunity for pupils to articulate alternative solutions to a problem.

12. Provides opportunity for pupils to predict consequences of alternative solutions to a problem.

13. Provides opportunity for pupils to try out solution(s) to a problem.

14. Provides opportunity for pupils to use concepts and skills previously acquired in a new or different situation - with teacher help.

TABLE I (continued)

Independent Action (I.A.)

A. Creates a physical environment that encourages and reflects pupil participation.

15. Provides activity centers or grouping arrangements where children can work in small groups or on individual projects.

16. Provides opportunity for different task-related activities to occur simultaneously.

17. There is evidence of student-made material in the classroom.

18. Allows pupils to move around room in nondisruptive activities.

19. Allows pupil use of resources and materials in classroom.

B. Takes into consideration inter- and intra- individual differences.

20. Allows pupils to express negative feelings (e.g., sadness, anger, frustration, and the like) that are not disruptive to the group.

21. Allows pupil expression of positive feelings (e.g., happiness, affection, pride) that are not disruptive to the group.

22. Acts upon differences in pupil personality.

C. Encourages pupils to use their own experience.

23. Acknowledges spontaneous interests of pupils where appropriate.

24. Draws on background and experiences of pupils.

D. Encourages pupil interaction.

25. Encourages pupils to be supportive of one another.

26. Encourages constructive pupil interaction (task related.)

27. Asks one student to respond to another within a questioning strategy.

28. Teacher is supportive of pupils (uses appropriate reinforcement.)

TABLE I (Continued)

E. Encourages pupils to use the problem-solving strategy on their own.

29. Provides opportunity for individual pupils to show that they have learned or understood something by solving a problem related to task.

30. Provides opportunity for pupils to use concepts and skills previously acquired in a new or different situation - without teacher help.

31. Allows pupils to make their own decisions wherever possible.

Teacher Use (Management) of Curriculum (T.C.)

32. Implements objective primarily through activities (rather than verbalization) which give the child the experience of the objective.

33. Uses relevant additional activities to implement the objective of the experience.

34. Uses relevant additional materials to implement the objective of the experience.

35. Paraphrases within confines of objective rather than follows curriculum verbatim.

36. Changes activity when pupils begin to exhibit inattentive behavior (pacing.)

37. Has pupils participate in distribution of materials (classroom management.)

TABLE I (Continued)

SOCIAL LEARNING ENVIRONMENT RATING SCALE
PUPIL SUBSCALE

Critical Thinking (C.T.)

B. Focuses on the objective of the experience.

38. Show interest in the task and are generally attentive.

C. Uses the inductive problem-solving strategy.

39. Articulate problem(s) related to the objective.

40. Label and detail accurately.

41. Mediate own responses.

42. Expand on ideas.

43. Make associations between ideas.

44. Show evidence of reflecting before responding to a thought provoking question or task.

45. Articulate (infer) alternative solutions to a problem.

46. Predict consequences of alternative solutions to a problem.

47. Try out (verify) solution(s) to a problem.

48. Pupils use concepts and skills previously acquired in a new or different situation - with teacher help.

Independent Action (I.A.)

A. Creates a physical environment that encourages and reflects pupil participation.

49. Make use of activity centers independently or in groups.

50. Work on different activities at the same time.

51. Move around room in nondisruptive activities.

52. Use resources and materials in the classroom.

B. Takes into consideration inter- and intra- individual differences.

53. Express positive feelings.

54. Express negative feelings.

TABLE I (Continued

D. Encourages pupil interaction.

55. Are supportive of one another (provide assistance, do not ridicule.)

56. Interact constructively with one another to solve a task-related problem.

E. Encourages pupils to use problem-solving strategy on their own.

57. Pupils use concepts and skills previously acquired in a new or different situation - without teacher help.

58. Work independently to solve a problem.

59. Participate in decision-making.

60. Asks questions unsolicited by teachers.

Curriculum. The training was designed to assure observer accuracy and agreement and to resolve issues in the logistics of classroom research.

Sample Description. The sample consisted of 17 intermediate level classes for the educable mentally retarded located in New York City. Students ranged in age from 9 to 14 and class size varied from 7 to 15. The class, rather than individual students or teachers, served as the unit of analysis for this study.

Data Collection. Seventeen classes were observed implementing six lessons from a unit on Emotional Security in the Social Learning Curriculum. These lessons were chosen by the curriculum developers as representative and vital to the total unit. The observed lessons were written, like all SLC material, from the MDI model and included critical thinking and independent action objectives and the inductive teaching method.

A total of 100 observations were made over a four-month period. During the observations the rater recorded information relevant to the items in sufficient detail to be able to reconstruct the lesson immediately after its completion. Thus, the total experience, rather than behavior frequency counts, became the basis for rating the items. All items were rated shortly after the lesson was completed.

Areas of Investigation

This study was conducted to examine the factors underlying the implementation of the Social Learning Curriculum with an instrument which evolved from a consideration of the major objectives and the process of implementation inherent in the curriculum itself. Specifically, there were three major questions:

1. is the actual implementation of the SLC in the classroom consistent with its theoretical model of implementation and major objectives?

2. What are the sources of variation in the implementation of the SLC?

3. Given the variation arrived at through investigation of the second question, to what degree do those differences exist?

Data Analysis. Statistical procedures were performed to yield inter-rater reliability measures, the factor structure underlying the SLERS, and analyses of variance.

Results

The following is a brief summary of the results of this study which pertain to the topic of personnel training in special education.

The five factor solution arrived at through factor analysis generally confirmed the process of implementation and teaching methodology specified in the curriculum. The factor structure represents an expanded version of the Mass-Differentiation-Integration model which incorporates the objectives of the curriculum and the environmental considerations mentioned earlier.

The first factor, representing the Mass, depicts the emergence of the problem situation. The teacher, from her understanding of the objective of the lesson, structures the classroom environment to focus the attention of the students on the emerging problem. The teacher's use of inductive questioning enables students to articulate the problem at hand.

The second factor, which represents Differentiation, is the analysis of the elements of the problem through the use of the inductive strategy. The teacher facilitates students' expression of ideas and feelings and the students begin to take a more active role in the teacher-learning transactions, through an examination of the components of the problem.

Factor 3 depicts problem resolution. Students interact and utilize the resources and activity centers of the classroom. The teacher provides the students with the opportunity to articulate alternative solutions to the problem, explore their possible consequences, and verify the solution which they predict

will work. The students, with the aid of the teacher, abstract a rule or concept which may apply to future situations.

Factor 4 represents an interface between critical thinking and independent action. Students apply their newly acquired skills and concepts to a different problem situation, without the aid of the teacher. This factor depicts Integration within the MDI model in that students apply the inductive strategy without relying on the aid of another person. In other words, they are acting independently.

The last factor represents the social learning environment. Essentially the teacher arranges the environment to make available to the students the total resources of the classroom, maximize the use of the inductive problem-solving strategy, and facilitate interaction between students.

After determining that the actual implementation of the SLC in classes was consistent with its theoretical model and major objectives, the variation in implementation was examined to determine what accounted for the differences in implementation between classes. The factors which most differentiated classes were the social learning environment, problem resolution and independent action.

In examining the degree to which the five factors were implemented the highest score occurred on the Mass factor, the lowest occurred on the problem resolution and independent action factors. Essentially, some classes appeared more conducive to the implementation of particular parts of the process.

Discussion

The amount and degree of variation in the implementation of the Social Learning Curriculum indicated that the curriculum is not being implemented fully in accordance with the process specified by the developers. It suggested the need to provide teachers with greater training in the process as well as the

content of the curriculum.

Usually, the introduction of a new curriculum into a school system or classroom is accompanied by an orientation to the materials. The orientation can be in written form or orally presented. In any case, scant attention is paid to the process of implementation intended for use with the program. Most often, the orientation will deal with management of time, materials, and content as they fit in with the ongoing program of the school.

The results of our study suggest, for the SLC at least, that the traditional orientation to a curricula is not sufficient to insure its optimal utilization. To the extent that the SLC is representative of other complex instructional programs and products, this suggestion would hold for them as well.

The question then arises as to what is necessary and sufficient to assure that an educational program will be implemented in the fashion intended by its developers. If that assurance cannot be provided then serious problems may arise. First, any evaluation of the program would be incomplete. Second, teachers and their supervisors will have no concrete way of knowing whether they are using the program or curriculum to its fullest potential.

This major question of quality control can be viewed as an issue in personnel training. Furthermore, it can be approached from the perspective of the curriculum developer or evaluator, the teacher trainer, the special education supervisor, and the teacher himself or herself.

It is axiomatic to some educators that how children learn is as important as what they learn. It would therefore seem incumbent upon curriculum developers to provide for teachers a sturdy vehicle for the delivery of the specific content.

In addition to the vehicle, or process, those who produce curricula should also concern themselves with building into the curriculum a means whereby teachers can know if, in fact, they are using the product as it is intended to be used. Curriculum evaluators should monitor the implementation of the program in its formative stages. Knowledge of differences in implementation makes the revision process and, therefore, the final product more in tune with the realities of the classroom. An evaluation becomes more meaningful if it can state the how and why of a program's success or failure. That information is as important as whether students who received the program gained more on a given measure than students who did not receive it.

The era of competency-based teacher education is now upon us. It is an understatement that an important part of any teacher's education is a thorough understanding of curricula. Prospective teachers should gain competencies in determining the validity of the process as well as content of curricula. Curriculum methods and materials courses could provide hands on experiences with actual curricula to enable pre-service teachers to determine, practice, and assess the process implicit or explicit in a given program.

In many areas of the country special education supervisors have the responsibility of determining what curricula shall be used in the special education programs in their schools. In effect, they act as curriculum consultants. If their training included a strong emphasis on process evaluation, the decision as to whether or not to adopt a specific curriculum would be more meaningful, particularly in view of the trend towards mainstreaming, which requires a more accurate fit between student's needs and educational programming. Indeed, a program now exists at the University of MIssouri to train special education curriculum consultants. While it may not be feasible to train every teacher or every special education supervisor as a curriculum consultant, some competency-based training in the implementation and evaluation of curricula seems justified.

Teachers have the responsibility of using to the best advantage of their students the curricula which they are given or, in some cases, choose. Their tasks would be considerably simplified if the curriculum which they are using specifies process as well as content and provides them with a means of monitoring their implementation. This is not to suggest that teachers should or would use a curriculum in a cookbook or lock-step fashion. Indeed, the process of implementation and teaching method specified in the curriculum should ideally provide for and consider the diversity of teaching styles and strategies which teachers display. Ideally, that process or method of implementation should reflect a concept of teacher-pupil transactions which allows for and encourages diversity. The concept of teacher-pupil transactions, as used here, means the interweaving of teaching and learning in a purposeful, prescribed manner determined by the objectives and the nature of the content within the parameters of the curriculum. The teacher becomes an active participant with the student in the learning process. This goal cannot be achieved solely by stating the curriculum's objectives in behavioral form. The process and method by which student attainment of those objectives can be facilitated must also be specified. Both the teacher and the supervisor must be competent in demonstrating and monitoring that process.

To summarize, the past few years have seen a tremendous increase in the number and variety of programs and curricula available to the special educator. These curricula span all content areas. Our experience suggests that special education personnel, from the researcher to the teacher, need to be versed in the process as well as the content of these programs in order to assure their optimal utilization towards the goals of competence and autonomy for special students.

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